

DENTISTRY

**IN
ANCIENT
EGYPT**

**BY
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Ancient Egyptians were skilled in medicine in different fields known today, knowing that the profession of dental physician existed since the early third millennium, thus HERODOTUS the great Greek historian, mentioned that “The practice of medicine in Egypt is so divided among them, that each physician is a healer of one disease and no more, all the country is full of physicians, some of the eye, some of the teeth, some of what pertains to the belly, and some of the hidden diseases”, this confirms and proves that physicians were specialized for specific diseases or organs, some dealt with eye, head and some with teeth or belly etc., thus ancient Egyptians believed in the great healing powers of their Gods and Goddesses therefore they believed that the Lioness Sekhmet was believed to bring epidemics and diseases, she was also the patroness deity of doctors.¹



Sekhmet (Sekhet, Sakhmet, Nesert)

Other Gods and Goddesses were known for curing and treating different diseases, for example Gods Amon, Horus and Duaw were responsible for treatment of eye diseases, Hathor and Taurt was a goddess of childbirth, etc.,.



Amon (Amen, Amun, Ammon, Amoun)





Hathor (Het-hert)

Egyptians practiced dentistry around 2900 BC, thus Imhotep was the chief vizier (minister) to Djoser, he was the high priest, an astrologist, the pyramid designer, a physician, and he was the founder of medicine as well, knowing that Ancient Egyptians believed that he had great healing powers, and considered him as the God of medicine.

In the fifth century B.C. Herodotus remarked on the degree of specialization he found in Egypt, including physicians

Most of the known specialist medical titles were carried by a certain **Ir-en-akhty** except for dentists who carried the separate title **ibeh**



Imhotep

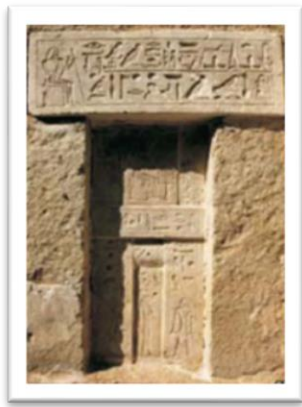
Inscription with the names of Netjerikhet (Djoser) and Imhotep

Hieroglyphic details, including eye and tusk symbols representing dentistry profession were discovered chiseled on the entrance of the tomb honoring 3 dentists served the nobility in ancient Egypt, thus -Iy Mry –the chief dentist is pictured on the wall ,taking in consideration that the swallow, tusk and arrow, meant 'chief dentist and doctor.



Iy Mry –the chief dentist





Egyptian dentists' tomb, at Saqqara, near the step pyramid-oldest in Egypt

The earliest known dentist physician was Hesy-Ra, 2700 BC, who was "Chief of Dentists and Doctors" to King Djoser, was known as "Chief of the Toothers and described as "the greatest physicians who treat the teeth."



Hesy-Re, head of dentists Old Kingdom, 3rd Dynasty

The earliest evidence of ancient dentistry is found in numerous papyri containing several prescriptions to dental diseases, such as pyorrhea, loose teeth, dental caries and abscesses and others.

The ancient Egyptian people believed that dental pain was caused by creatures called tooth worms, thus the most common dental diseases found in ancient Egypt was Attrition basically caused by the coarse diet (which may have lacked minerals and vitamins) as well as presence of sand, husks and sometimes straw in their bread, caries also was a very common dental disease in ancient Egypt despite a diet free of refined sugar, thus this disease seemed to have been much more common among the elite than it was among lower classes may be due to the higher sugar content in the diet of higher class Egyptians.²

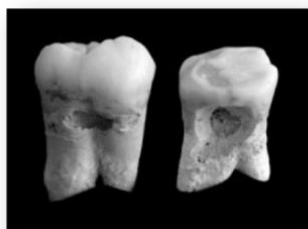
Also abscesses "purulence in the gums", calculus formation, gums inflammation, jawbone and tooth loss was also detected along with other conditions such as receding gums "a tooth which gnaws against an opening in the flesh", loose teeth, ulcerative stomatitis "eating ulcer on the gums", periodontitis ("blood-eating"), alveolar diseases and dental sepsis were also detected. Most of the previous dental diseases are mentioned in medical papyri such as the Ebers papyrus.⁶



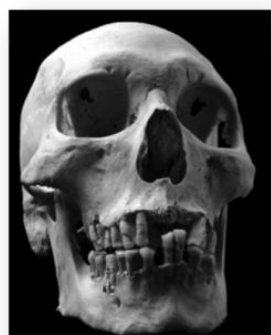
Attrition



Abscess on right mandibular



Root caries on the mandibular right third molar [left] and left first molar [right]



A skull showing severe periodontal disease, ante mortem tooth loss, Calculus formation and apical abscesses



Head of the mummy of Amenhotep III with some lost front teeth due to alveolar abscesses of which he was still suffering at the time of his death. (The matter filling the mouth cavity is resin used during mummification)

The previously mentioned data was known and studied through the examination of skeletal and mummified remains from ancient Egypt which provided evidence for the dental health of the ancient Egyptian civilization where tooth ailments was frequent as some mummies showed evidences of severe infections and loose teeth taking in consideration that ancient Egyptian people believed that the cause of the decays were ‘worms’, it is also important to mention that Egyptian pharaohs were known to have suffered from periodontal (gum) disease and that fact has been confirmed by examination of mummies as well as the application of modern scientific nondestructive techniques of investigations and analysis such as Radiographs, endoscopes, CT Scans, etc. .

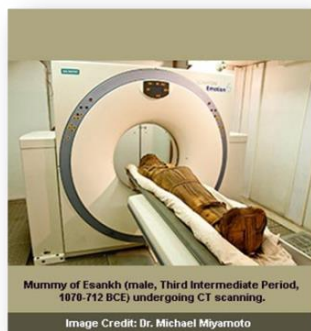


members of the Manchester Mummy Project used endoscope to take tissue samples from the mouth of a mummy. Manchester Museum, University of Manchester



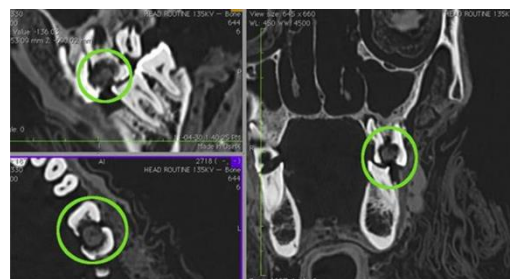
A 3D reconstruction of the 2,100-year-old mummy's teeth
CREDIT: Image courtesy International Journal of Paleopathology

Scientists performed CT scans on several mummies and studied it revealing a lot of data about ancient Egyptians.⁴



A mummy being CT scanned

CT scan has been performed on a head of a 2,100-year-old Egyptian mummy finding evidence for cavities being filled with linen, which may have first been wet or dipped in a medical material used for curing dental ailments such as fig juice or cedar oil this linen mass seems to have acted as a "barrier" preventing food particles from getting inside the cavities and possibly relieving the man's pain.³



CT scans reveal a linen mass that was inserted into a cavity on the mummy's left side between the first and second molars. It may have been dipped in medicine such as fig juice or cedar oil
CREDIT: Image courtesy International Journal of Paleopathology

Egyptians treated and cured dental problems including teeth extraction, treatment of mouth ulcers and jaw dislocation , all such data found in the Edwin Smith and Ebers Papyri, they also performed dental surgeries, where surgically produced holes used to drain an abscess under the 1st molar were found in the mandible of a 4th

dynasty mummy around (2625 - 2510 BC).⁴



Worn ancient Egyptian teeth showing an abscess drainage hole



Dental Surgery, Jaw of ancient Egyptian showing drill holes used in dental repair.
Courtesy of the Gordon Museum

Also prosthetic dentistry existed and this is known through discovering an amazingly detailed dental work on a mummy from ancient Egypt that archaeologists have dated to 2000 BC, where intricate gold work around the teeth is clearly seen, and the two donor teeth had holes drilled into them, wires were strung through the holes and then around neighboring teeth.⁵



Ancient Egyptian Dental work that dated to 2000 BC



Two teeth joined by gold wire

Another discovery was made by Junker at Giza consisting of two teeth, a lower second and a lower third molar joined together by a piece of gold wire woven around the gingival margins, Professor Euler who examined that dental discovery indicated that the dental work was performed in the mouth of the living person not after his death.⁶

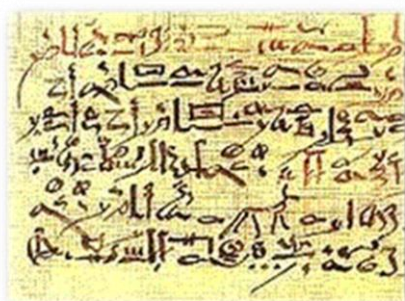


Two teeth joined by gold wire (Junker)



El-Quatta Bridge

Egyptian medical recipes, prescriptions and remedies were recorded in several manuscripts such as Edwin Smith Surgical Papyrus (1600 B.C), Ebers papyrus (1534 B.C)⁷, Hearst Papyrus (1450 B.C), London Papyrus (1350 B.C), Berlin Papyrus (1350 B.C) and Chester Papyrus (1200 B.C).

Ebers papyrus⁷

Edwin Smith papyrus

Most of the Egyptian dental medical prescriptions are found in Ebers papyrus (dating to circa 1550 BC). Among the oldest and most important medical papyri of ancient Egypt, it was purchased at Luxor, (Thebes) 1873 by Georg

Ebers,⁶ it is currently kept at the library of the University of Leipzig, in Germany), and here are some of those remedies:-

1. Eb. 89. 2-3. For fixing a loose tooth a mixture of crushed seeds, ochre, and honey made into a paste and applied to the tooth.



Honey

Ochre clays (limonite)
Hydrated iron (III) oxide

2. Eb. 89. 4-6. Treatment of toothache using a paste of ground-up vegetables and mineral substances with honey.

3. Eb. 89. 6-7. For a septic tooth (lit. 'a tooth that gnaws into an opening in the flesh'), the ingredients are of an astringent nature: cumin, colocynth, and frankincense.



Frankincense



Herbs



Colocynth

4. Eb. 89. I O - I I. For the cure of the inflammation of the gums (stomatitis) they used homely date and beans, which were exposed to the dew, mixed with milk, chewed and then spat out, then repeated for nine days.

5. Eb. 89. 12-13. A paste for making healthy teeth consists of two vegetable drugs, mandrake and species of Potentilla, chewed and spat out.



Mandragoe(Mandrake)



Potentilla

Medical tools were also known by ancient Egyptians thus the carvings on the Wall of the twin temple of Com Ombo depicts some surgical instruments and tools as well as the queen in labor on an obstetric chair.

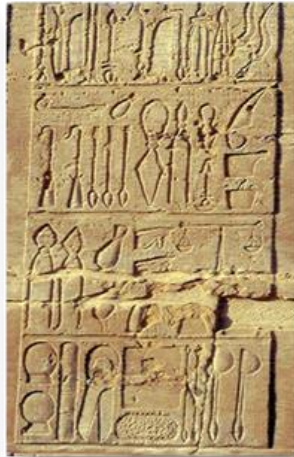


Wall of twin temple of Com Ombo temple with surgical instruments carvings and queen in labor on an obstetric chair



Com Ombo temple

The carved tools are knives, drill, saw, forceps or pincers, censer, hooks, bags tied with string, beaked vessel, vase with burning incense, Horus eyes, scales, pot with flowers of Upper and Lower Egypt, pot on pedestals, graduated cubit or papyrus scroll without side knot (or a case holding reed scalpels), shears and spoons.⁶



Com Ombo inscription detailing ancient Egyptian medical tools

Also some some surgical instruments and tools made of different materials such as stone, wood, bronze, copper and iron were discovered in varios excavations, along with containers used for keeping medical materials.



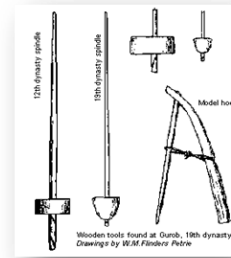
Pots and containers used for keeping medical materials



medical tools& container



Stone tools



Wooden tools



Bronze tools



Copper tools



Iron tools

In Conclusion we can say that ancient Egyptians were pioneers in various field of science and knowledge and most probably what we know about them is just a little of what they had and more will be known and discovered through excavations, discoveries, use of technology, etc., Great appreciation to our ancestors, makers of civilization hoping to follow their

lead enriching life with useful science.

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